

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-143 (Canceled)

144. (Currently Amended) A semiconductor structure comprising:

a monocrystalline silicon substrate;

an amorphous oxide material layer in contact with the monocrystalline silicon substrate;

a monocrystalline perovskite oxide material layer selected from the group consisting of alkaline earth metal titanates, alkaline earth metal zirconates, alkaline earth metal hafnates, alkaline earth metal tantalates, alkaline earth metal ruthenates, alkaline earth metal niobates, alkaline earth metal vanadates, alkaline earth metal tin based perovskites, lanthanum aluminate, lanthanum scandium oxide and mixtures thereof contacting the amorphous oxide material layer; and

a monocrystalline compound semiconductor material overlying the monocrystalline perovskite oxide material.

145. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline silicon substrate is orientated in the (100) direction.

146. (Previously Presented) The semiconductor structure of claim 144 further comprising a template layer formed between the monocrystalline perovskite oxide material and the monocrystalline compound semiconductor material.

147. (Previously Presented) The semiconductor structure of claim 144 further comprising a buffer material of monocrystalline semiconductor material formed between the

monocrystalline perovskite oxide material and the monocrystalline compound semiconductor material.

148. (Previously Presented) The semiconductor structure of claim 147 further comprising a template layer formed between the monocrystalline perovskite oxide material and the buffer material.

149. (Previously Presented) The semiconductor structure of claim 147 wherein the buffer material is selected from the group consisting of: Germanium, a $\text{GaAs}_x\text{P}_{1-x}$ superlattice where x ranges from 0 to 1, an $\text{In}_y\text{Ga}_{1-y}\text{P}$ superlattice where y ranges from 0 to 1, and an InGaAs superlattice.

150. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline perovskite oxide material is selected from the group consisting of: alkaline earth metal tin based perovskites.

151. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline perovskite oxide material comprises $\text{Sr}_z\text{Ba}_{1-z}\text{TiO}_3$ wherein z ranges from 0 to 1.

152. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline compound semiconductor material is selected from the group consisting of: III-V compounds, mixed III-V compounds, II-VI compounds, and mixed II-VI compounds.

153. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline compound semiconductor material is selected from the group consisting of: GaAs, AlGaAs, InP, InGaAs, InGaP, ZnSe, AlInAs, CdS, CdHgTe, and ZnSeS.

Application No. 09/986,034
Reply to Office Action of June 10, 2005

154 - 163 (Cancelled)